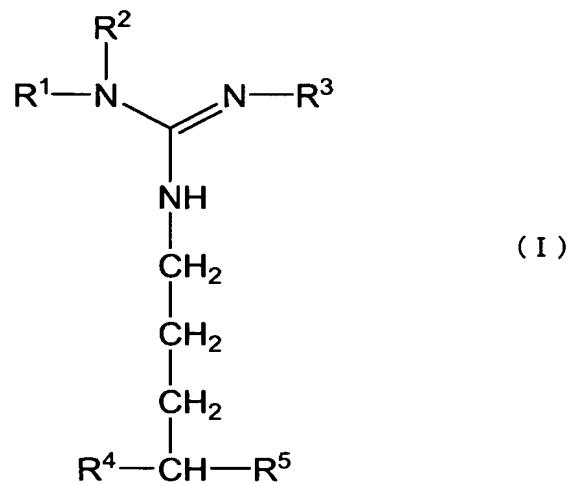


What is claimed is:

1. A compound represented by the general formula (I) or a salt thereof:

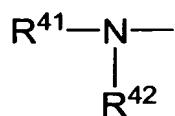
[Formula 1]



wherein R¹, R² and R³ each independently represent a hydrogen atom or an alkyl group having 1 to 3 carbon atoms, provided that at least one of R¹, R² and R³ does not represent a hydrogen atom; R⁴ represents an amino group which has a substituent; and R⁵ represents a carboxyl group which may have a substituent.

2. The compound or salt thereof according to Claim 1, wherein R⁴ represents the following formula:

[Formula 2]



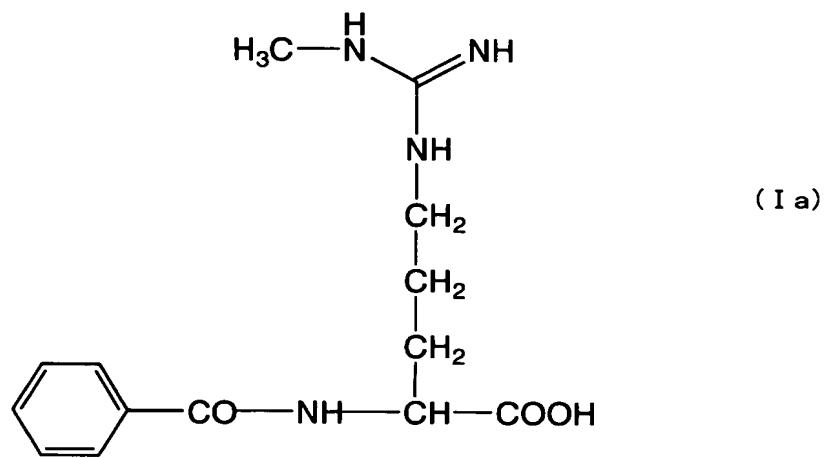
wherein R⁴¹ represents a group represented by R⁴⁰¹CO- where R⁴⁰¹ represents a hydrogen atom, a hydrocarbon group which may have a substituent or a heterocyclic group which may have a substituent, a group represented by R⁴⁰²S(O)_m- where R⁴⁰² represents a hydrogen atom, a hydrocarbon group which may have a substituent or a heterocyclic group which may have a substituent, and m is an integer of 1 or 2, a group represented by R⁴⁰⁵N(R⁴⁰⁶)-CHR⁴⁰⁴-CO-[NH-CHR⁴⁰³-CO]_n- where R⁴⁰³, R⁴⁰⁴, R⁴⁰⁵ and R⁴⁰⁶ each independently represent a hydrogen atom, a hydrocarbon group which may have a substituent or a heterocyclic group which may have a substituent, and n is an integer of 1 to 50, or a peptidyl group which may have a substituent; and R⁴² represents a hydrogen atom or an alkyl group having 1 to 3 carbon atoms.

3. The compound or salt thereof according to Claim 2, wherein R⁴¹ represents a benzoyl group which may have a substituent, a benzoylpeptidyl group which may have a substituent, a dansyl group which may have a substituent or a dansylpeptidyl group which may have a substituent; and R⁴² represents a hydrogen atom.

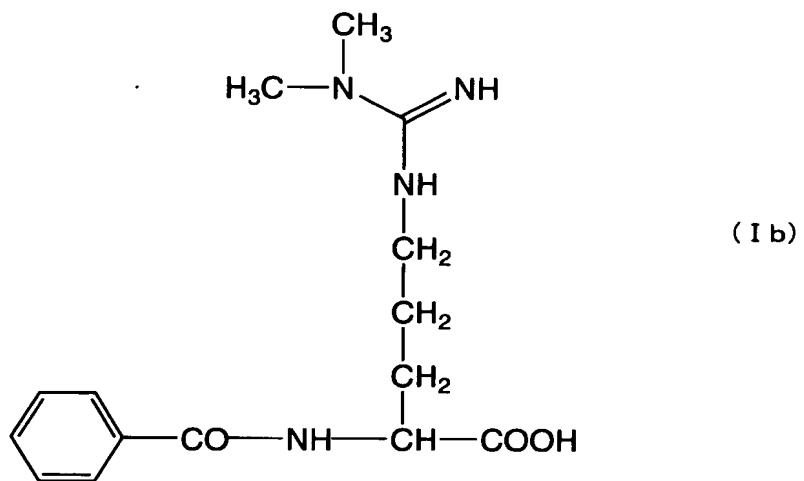
4. The compound or salt thereof according to any one of Claims 1 to 3, wherein R¹, R² and R³ each independently represent a hydrogen atom or a methyl group, provided that at least one of R¹, R² and R³ represents a methyl group.

5. The compound or salt thereof according to Claim 4, which is a compound represented by the formula (Ia), (Ib) or (Ic) or a salt thereof.

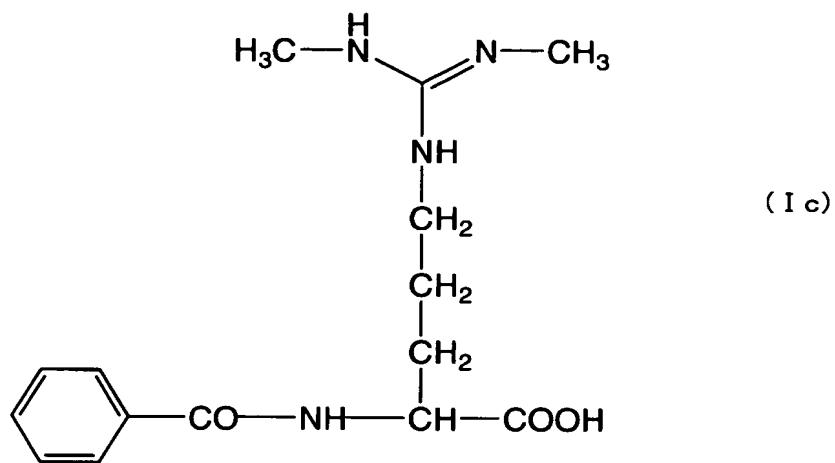
[Formula 3]



[Formula 4]

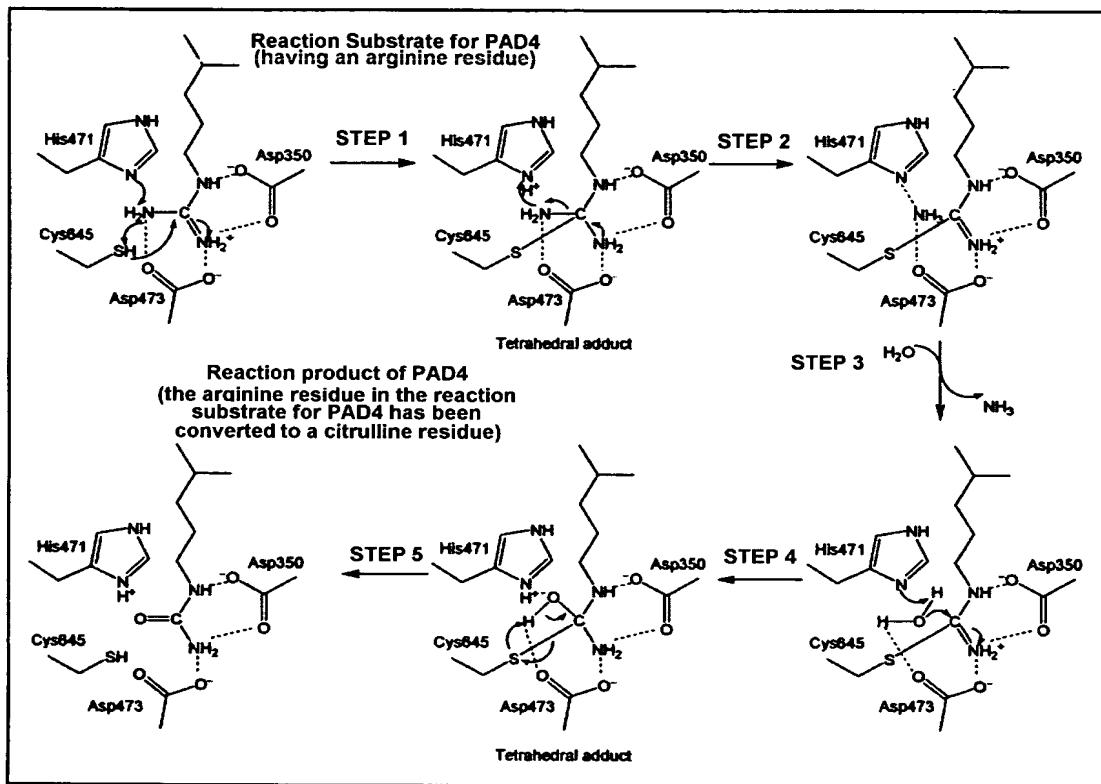


[Formula 5]



6. A peptidylarginine deiminase 4 inhibitor comprising, as the active ingredient, a substance capable of inhibiting any one of the steps 1 to 5 in the reaction mechanism as shown in the following scheme between peptidylarginine deiminase 4 having the amino acid sequence depicted in SEQ ID NO:1 and its reaction substrate.

[Formula 6]



In the scheme, Asp350, His471, Asp473 and Cys645 represent an aspartic acid residue at position 350, a histidine residue at position 471, an aspartic acid residue at position 473 and a cysteine residue at position 645, respectively, in the amino acid sequence depicted in SEQ ID NO:1.

7. The peptidylarginine deiminase 4 inhibitor according to Claim 6, wherein the substance capable of inhibiting any one of the steps 1 to 5 in the reaction mechanism between peptidylarginine

deiminase 4 having the amino acid sequence depicted in SEQ ID NO:1 and its reaction substrate is an arginine derivative.

8. A peptidylarginine deiminase 4 inhibitor comprising, as the active ingredient an arginine derivative having a substituent on each of the amino and guanidino groups in arginine and optionally having a substituent on the carboxyl group in arginine.

9. The peptidylarginine deiminase 4 inhibitor according to Claim 7 or 8, wherein the arginine derivative is a compound or a salt thereof as recited in any one of Claims 1 to 5.

10. The peptidylarginine deiminase 4 inhibitor according to any one of Claims 6 to 9, which is used for the prevention and/or treatment of diseases associated with peptidylarginine deiminases.

11. The peptidylarginine deiminase 4 inhibitor according to Claim 10, wherein the diseases associated with peptidylarginine deiminase are selected from the group consisting of rheumatoid arthritis, psoriasis, and multiple sclerosis.